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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/816,247

03/31/2004

Seung June Yi

2101-3059

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05/14/2008

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EXAMINER

CONTINO, PAUL F

ART UNIT

PAPER NUMBER

2114

MAIL DATE

DELIVERY MODE

05/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                  |  |
|------------------------------|--------------------------------------|----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/816,247 | <b>Applicant(s)</b><br>YI ET AL. |  |
|                              | <b>Examiner</b><br>PAUL F. CONTINO   | <b>Art Unit</b><br>2114          |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-12, 18-20, 29 and 35-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-12, 18-20, 29 and 35-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION: Final Rejection**

***Response to Arguments***

1. Applicant's arguments filed February 19, 2008, have been fully considered but they are not persuasive.

The Examiner respectfully disagrees with the Applicant's arguments on pages 10 and 11 of the Remarks regarding the WCDMA reference in combination with the 3GPP reference as failing to teach of the last limitation of claim 9. WCDMA on page 123 in section 7.4.1 discusses the processes which occur during transparent mode [a "second manner"] under the radio link control protocol (TM under RLC). Either erroneous data units are discarded or they are marked as erroneous. For this to occur, a delivery configuration must have been implemented in order to determine what to do if an erroneous packet was received. The WCDMA reference fails to elaborate on the inherent characteristics of data unit processing in an RLC environment under TM. The Examiner has provided the 3GPP reference in order to present to the Applicant the inherent characteristics of which are not taught in the WCDMA reference. Page 54 of the 3GPP reference under section 11.1.3 describes various data unit delivery configurations under TM. The fourth bullet in section 11.1.3 describes what occurs when delivery of a data unit is configured - the data unit is delivered to an upper layer. The third bullet in section 11.1.3 describes when a *delivery* of the data unit is not configured – the data unit is discarded. Further,

WCDMA alludes to discarding of a data unit if there is no delivery configuration (i.e. marking of data units).

The Applicant provides a reference to an inapplicable reference post-dating the application's effective priority data and arguments which the Examiner has considered. The Examiner realizes that incorrect reference pages and sections of the 3GPP reference were cited in the Office Action dated November 13, 2007, and have been corrected.

The Examiner respectfully disagrees with the Applicant's further arguments on page 13 of the Remarks regarding the 3GPP reference as failing to teach that a delivery of the data unit is not configured". The receiver as taught on page 54 of 3GPP under section 11.1.3 is always configured to operate in one manner or another. However, the configuring of the receiver itself and the general configuration of delivery of a data unit are two separate elements. The receiver has a "Delivery of Erroneous SDUs" parameter set to "no". Because the *receiver* is configured in this manner, the actual *delivery* of data units is not configured, and in turn, the data units are discarded.

The preceding response applies also to the Applicant's remaining arguments on pages 14-17.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9-12, 18-20, 35-40 and 42-44 are rejected under 35 U.S.C. 102(b) as being anticipated by WCDMA (*WCDMA for UMTS: Radio Access for Third Generation Mobile Communications*) in conjunction with 3GPP (*3GPP TS 25.322 V4.4.0 (2002-03)*).

The use of the 3GPP reference in conjunction with WCDMA for a multiple reference 35 U.S.C. 102(b) [see MPEP2131.01] is to prove the primary reference WCDMA is enabling and further describe the inherency of certain characteristics of WCDMA.

As in claim 9, WCDMA discloses a method of processing data in a receiver apparatus used in a wireless communication system, the receiver apparatus comprising a medium access control (MAC) layer and a radio link control (RLC) layer for processing data units (*page 117 lines 5-6 under Introduction*), the method comprising the steps of:

communicating a data unit and a cyclic redundancy code (CRC) check result associated with the data unit from the MAC layer to the RLC layer (*page 123 lines 5-6 under 7.4.1 RLC Layer Architecture*);

determining in the RLC layer that the CRC check result indicates the data unit has an error (*page 124 in lines 6-7 where it is implied that a data unit has an error because of the determination as to whether or not the data unit should be discarded*); and

processing the data unit in accordance with one of a first manner and a second manner, the selection of one of the first manner and the second manner based upon at least an operation mode (*pages 123-124, where a first manner is interpreted as a result of either an acknowledged*

*mode or an unacknowledged mode, and the second manner is interpreted as a result of a transparent mode),*

wherein the second manner comprises checking whether a delivery of the data unit having the error has been configured and either delivering the data unit to an upper layer if the delivery of the data unit is configured or discarding the data unit if the delivery of the data unit is not configured (*page 123 lines 7-8 under 7.4.1 RLC Layer Architecture, where checking for configuration precedes the determination as to whether to discard or mark erroneous data [and deliver]; 3GPP page 54 section 11.1.3 discloses configuration of delivery of data units, and further discloses a determination as to whether the data unit is discarded or delivered to an upper layer).*

As in claim 10, WCDMA discloses the data unit is processed in the first manner if the operation mode is one of unacknowledged mode (UM) and acknowledged mode (AM) (*page 124).*

As in claim 11, WCDMA discloses the data unit is processed in the second manner if the operation mode is transparent mode (TM) (*pages 123-124).*

As in claim 12, WCDMA discloses the first manner comprises discarding the data unit in the RLC layer (*page 124).*

As in claim 18, WCDMA discloses the data unit received from the MAC layer does not include a header information associated with the MAC layer (*page 119 in the last sentence under MAC-c/sh*).

As in claim 19, WCDMA discloses the data unit received from the MAC layer is associated with a logical channel that is mapped in a 1:1 ratio with a transport channel (*page 119 in lines 5-6 under MAC-c/sh, where it is interpreted that mapping of the single BCCH logical channel to a single BCH/FACH transport channel implies a 1:1 mapping ratio*).

As in claim 20, WCDMA discloses A receiver apparatus for processing data in a wireless communication system, the receiver apparatus comprising:

a medium access control (MAC) layer that transfers a data unit and a cyclic redundancy code (CRC) check result associated with the data unit (*page 123 lines 5-6 under 7.4.1 RLC Layer Architecture; page 127 lines 23-26*); and

a radio link control (RLC) layer in communication with the MAC layer, the RLC layer receiving from the MAC layer the data unit and the CRC check result, wherein the RLC layer examines the CRC check result sent from the MAC layer that indicates whether the data unit has an error (*page 123 in the second paragraph under 7.4.1, which discloses delivering a result of the CRC check to the RLC layer; page 124 in lines 6-7 where it is implied that a data unit has an error because of the determination as to whether or not the data unit should be discarded*), and processes the data unit in accordance with one of a first manner and a second manner, the selection of one of the first manner and the second manner based upon at least an operation mode

*(pages 123-124, where a first manner is interpreted as a result of either an acknowledged mode or an unacknowledged mode, and the second manner is interpreted as a result of a transparent mode),*

wherein the second manner comprises checking whether a delivery of the data unit having the error has been configured and either delivering the data unit to an upper layer if the delivery of the data unit is configured or discarding the data unit if the delivery of the data unit is not configured *(page 123 lines 7-8 under 7.4.1 RLC Layer Architecture, where checking for configuration precedes the determination as to whether to discard or mark erroneous data [and deliver]; 3GPP page 54 section 11.1.3 discloses configuration of delivery of data units, and further discloses a determination as to whether the data unit is discarded or delivered to an upper layer).*

As in claim 35, WCDMA discloses a method of processing data by a radio link control (RLC) entity, the method comprising:

receiving the RLC data unit having a cyclic redundancy code (CRC) error *(page 123 in the second paragraph under 7.4.1, which discloses receiving a CRC error [CRC check result] in conjunction with the data); and*

selectively processing the RLC data unit having the CRC error in one of a first manner and a second manner *(pages 123-124, where a first manner is interpreted as a result of either an acknowledged mode or an unacknowledged mode, and the second manner is interpreted as a result of a transparent mode),*



wherein the first manner is performed when the RLC entity is in a non-transparent mode, such that the RLC data unit is discarded (*page 124, where a first manner is interpreted as a result of either an acknowledged mode or an unacknowledged mode, in which the data unit is discarded*), and

wherein the second manner is performed when the RLC entity is in a transparent mode, and comprises determining whether a delivery of the RLC data unit having the CRC error has been configured, such that the RLC data unit is either further processed or discarded based on the determining step (*page 123 lines 7-8 under 7.4.1 RLC Layer Architecture, where checking for configuration precedes the determination as to whether to discard or mark erroneous data [and deliver]; 3GPP page 54 section 11.1.3 discloses configuration of delivery of data units, and further discloses a determination as to whether the data unit is discarded or further processed*).

As in claim 36, WCDMA discloses the second manner further comprises processing [the] RLC data unit when an instruction associated with a delivery of erroneous service data units (SDUs) is configured (*page 123 in lines 7-8 under 7.4.1 RLC Layer Architecture, where the marking of erroneous data implies an instruction associated with an erroneous SDU; the instruction for further processing is inherent to Transparent Mode error processing, as is specified under 3GPP*).

As in claim 37, WCDMA discloses further processing the RLC data unit comprises at least one of delivering the RLC data unit together with an error indication to a higher protocol

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layer, discarding the RLC data unit (*page 124 lines 20-21, RLC data unit discarding*), and delivering the RLC data unit without error indication to a higher protocol layer.

As in claim 38, WCDMA discloses checking the CRC error information transferred together with the RLC data unit when the delivery of erroneous SDUs is not set (*WCDMA page 123 under 7.4.1; 3GPP page 54 under 11.1.3 "Delivery of Erroneous SDUs" is configured as "no"*); and

immediately discarding the RLC data unit when the RLC data unit contains an error (*WCDMA page 123 under 7.4.1 and 3GPP page 54, where only SDUs without errors are submitted to upper layers, while those with errors are discarded*).

As in claim 39, WCDMA discloses checking the CRC error information transferred together with the RLC data unit, when the delivery of erroneous SDUs is set (*WCDMA page 123 under 7.4.1; 3GPP page 54 under 11.1.3 "Delivery of Erroneous SDUs" is configured as "yes"*); and

informing an upper layer that the data unit contains an error when transmitting the RLC data unit to the upper layer (*WCDMA page 123 under 7.4.1 and 3GPP page 54, where all SDUs are transmitted to an upper layer, and those with errors provide an error indication*).

As in claim 40, WCDMA discloses processing the RLC data unit containing the error as a normal data unit and transferring the processed data unit to the upper layer without checking the CRC error information received together with the RLC data unit when the delivery of erroneous

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SDUs is set as “no detect” (*WCDMA page 123 under 7.4.1 and 3GPP page 54, see “Delivery of Erroneous SDUs” configured as “No detect”, where all SDUs are transferred without regard to CRC error information*).

As in claim 42, WCDMA discloses the RLC data unit is received from a lower layer in the form of a RLC protocol data unit (PDU) (*WCDMA page 123 under 7.4.1, and 3GPP page 54 under 11.1.3 in the first line*).

As in claim 43, WCDMA discloses the data unit having the error is an erroneous Service Data Unit (SDU) (*page 124 paragraph 3 line 5*).

As in claim 44, WCDMA discloses the data unit having the error is an erroneous Service Data Unit (SDU) (*page 124 paragraph 3 line 5*).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over CarTALK (*Communication Architecture Deliverable D6*) in view of 3GPP, further in view of Nagpal et al. (US PGPub 2003/0211846).

As in claim 29, CarTALK teaches a method of processing data in a receiver apparatus used in a wireless communication system, the receiver apparatus comprising a physical layer and a medium access control (MAC) layer for processing data units (*Figs. 47-50*), the method comprising the steps of:

communicating a data unit and a cyclic redundancy code (CRC) check result associated with the data unit from the physical layer to the MAC layer (*Figs. 47 and 49; page 90*);

determining in the MAC layer that the CRC check result indicates the data unit has an error (*page 90*).

However, CarTALK fails to teach the remainder of the limitations of the claim. 3GPP discloses checking whether an a delivery of the data unit having the error has been configured, and either delivering the data unit to an upper layer when the delivery of the data unit is configured or discarding the data unit when the delivery of the data unit is not configured (*page 55 10.4 line 4 discloses configuration of delivery of data units, and page 56 11.1.3 discloses a determination as to whether the data unit is discarded or delivered to an upper layer*). Nagpal et al. teaches of examining the data unit for presence of header information associated with a MAC header (*paragraphs [0048]-[0050], where the discriminating indicator in the MAC header is interpreted as header information associated with a MAC header; claims 2 and 14*); discarding

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the data unit if the header information is present (*paragraphs [0048]-[0053]; claims 2 and 14*); and processing the data unit if the header information is not present (*paragraphs [0049]-[0053]*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included the checking of configuration and further processing as taught by 3GPP in the invention of CarTALK. This would have been obvious because 3GPP outlines an inherent part of error processing in the physical, MAC, and RLC layers.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the header checking as taught by Nagpal et al. in the combined invention of CarTALK and 3GPP. This would have been obvious because selective processing of CCCH messages as taught by Nagpal et al. reduces power consumed (*abstract, paragraph [0010]*) in the same environment and implementation as taught by CarTALK.

\* \* \*

4. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over WCDMA in conjunction with 3GPP in view of AMR1 (*3GPP TS 25.415 V3.7.0 (2001-06)*), further in view of ARM2 (*3GPP TS 26.071 V4.0.0 (2001-03)*).

As in claim 41, WCDMA/3GPP teach of an RLC data unit. However, WCDMA/3GPP fails to teach of an adaptive multi-rate (AMR) codec. AMR1 and AMR2 teach of an RLC data unit which supports an AMR codec processing (*AMR1: page 12, last paragraph above 5 Transparent Mode, version 1; AMR2: page 6 in the first paragraph under 4 General*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included the AMR codec processing as taught by ARM1/ARM2 in the invention of WCDMA/3GPP. This would have been obvious because AMR is a well-known integrated feature common to WCDMA/3GPP which enhances the fault tolerance of such communication systems (*ARM2 page 6 first paragraph under 4 General*).

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL F. CONTINO whose telephone number is (571) 272-3657. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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5/7/2008